Region 1 FY 2013 Invasive Species Control Program Proposal

Refuge/complex name: Hanford Reach National Monument

Project title: Snively Basin Rye Field Rehabilitation

Total amount requested: $8,350

Project description:

Target Invasive Species: Cereal rye (*Secale cereale*; a Class C noxious weed in WA), Diffuse knapweed (*Centaurea diffusa*; a Class B noxious weed in WA)
Infested Acres: ~530 acres
Treatment Acres: ~530 acres

The Snively Basin area of the Arid Lands Ecology Reserve (ALE) within the Hanford Reach National Monument (Monument) was historically used to farm cereal rye, among other dryland grains. The rye had seeded itself out and maintained a near monoculture within the old fields since farming ceased in 1944. It was largely confined to these fields by the relative health of the surrounding native shrub-steppe habitats until catastrophic wildfires in 2000 and 2007. Following the 2000 fire, the rye began to expand and take over surrounding habitats. By 2008 it had expanded to infest over 530 acres. Following the 2007 wildfire, USFWS (Service) began efforts to eradicate cereal rye from the ALE and to establish self-sustaining native plant communities. The treatment prescription developed for this project relies on multi-year (7+) integration of chemical, mechanical (mowing, prescribed fire), and cultural (competition seeding) treatments, following a traditional successional rehabilitation construct. Since project initiation in February 2008, the Service has made significant inroads in exhausting the cereal rye seed bank and establishing native plant communities within the old fields. The fields have been intentionally re-burned twice, chemically wiped three times, mowed once, and twice seeded with two different (early seral and mid-seral) customized seed mixes. To say the Service has made a significant investment in this project would be an understatement.

The proposed project is to continue to exhaust the cereal rye seed bank through properly-timed wipe application of glyphosate, and to eradicate new invasives as they are encountered. The entire cereal rye infestation area (~530 acres) is proposed to be chemically wiped; this and the two access roads are proposed to be monitored and treated against new invaders.

Distinct project with well-defined objectives (10 points):
The proposed project follows standard, well established ecological principles in combating and replacing a persistent invader. The project was initiated in response to a catastrophic event, to prevent and reverse the degradation of native habitats on the refuge. This would be year 6 of a 7+ year prescription, where management actions have entered a maintenance phase while giving newly installed native plant communities a chance to establish (i.e., maintaining the ecological gap to allow native plants time to fill in rather than invasives).

Potential for maximum control (10 points):
The project goal is the eradication of cereal rye from Snively Basin and the establishment of self-sustaining native plant communities. The project area is surrounded for miles by native plant communities. As long as self-sustaining native plant communities are allowed to establish in the created gap, there is little to no chance of reinvasion of the project area. This would be year 6 of a 7+ year prescription, where subsequent treatments are primarily maintenance and fill-in efforts (e.g., continued

attrition of the cereal rye seed bank when and where necessary, targeting and replacing small (<5 acre) persistent patches of rye, and introducing and establishing additional native species). Significant milestones have already been achieved.

Biological benefit to priority species or BIDEH (10 points):
One of the primary purposes of the Monument as stated in Presidential Proclamation 7319 ("Establishment of the Hanford Reach National Monument") and in the Final Comprehensive Conservation Plan is to protect and restore shrub-steppe ecosystems. The cereal rye is not native and causes severe degradation of shrub-steppe ecosystems. Eradication of cereal rye and establishment of self-functioning native ecosystems by definition supports the primary purpose of the Monument.

Utilizes the principles of Integrated Pest Management (5 points):
The full project prescription has relied on mechanical (prescribed fire, mowing), chemical, cultural (competition seeding), and preventative controls, as well as early detection/rapid response (EDRR). This proposal relies on chemical and EDRR.

Monitoring to document and evaluate project success (5 points):
The cereal rye infestation has been mapped over time from multiple aerial imagery datasets, as well as with GPS-mapping and ground-truthing. The Service has (or has access to) pre-fire sampling data of small mammal, breeding birds/avian communities, and plant communities, and post-fire/pre-treatment data of breeding bird and plant communities, from within and adjacent to the Snively Basin. Additionally, multiple photopoints have been established within and adjacent to the project area. Long-term monitoring will include revisiting the vegetation monitoring transects, continuing the breeding bird monitoring, resampling the small mammal populations, revisiting the photopoints, and GPS/GIS mapping of treatments and remaining infestations.

Annual monitoring will be accomplished through direct observation of treated infestations. New infestations will be GPS'ed at treatment using hand-held Trimble® units and a customized data dictionary in TerraSync®. These GPS files will be imported into the Complex's GIS for long-term documentation and monitoring. Treated sites will be revisited in subsequent years and retreatments will be made as needed. Established photopoints will be revisited to document change over time, and new photopoints will be established as necessary.

Involves matching funds (*not required*) or in-kind support from partners (5 points):
Volunteers from the Lower Columbia Basin Audubon will conduct monitoring of avian community response to treatment.

Budget: $8,350

Personnel: $3,250
Equipment/Travel: $2,250
Materials: $2,850

Project Contact: Kevin Goldie, Wildlife Biologist, Mid-Columbia River NWR Complex, 509-546-8323